

REMARKS

Claims 1, 3, 6-7, 14, 16-17, 21, 24-25, 30, 32, 37, and 42-43 have been amended. Claims 49-66 have been added. Claims 2, 4-5, 18-20, 26-28, 31, 33-35, 41, and 44-47 have been canceled without prejudice. With entry of this amendment, claims 1, 3, 6-17, 21-25, 29-30, 32, 36-40, 42-43, and 48-66 will be pending.

The Examiner rejected claims 24-25 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner rejected claims 22-23 under 35 U.S.C. § 102(b) as being anticipated by the Biocatalysts Technical Bulletin Number 110 (“the Technical Bulletin”). The Examiner also rejected claims 1-21 and 24-48 under 35 U.S.C. § 103(a) as being unpatentable over the Technical Bulletin and U.S. Pat. No. 6,203,837 issued to Kalenian, et al. (“the Kalenian patent”).

I. Independent Claim 1 and Dependent Claims 3, 6-17, 21-23, and 49-53

Amended claim 1 recites a process for producing a natural vanilla extract comprising:
contacting cured vanilla beans with an aqueous alcohol solvent at a pressure of about 10 to 48 psig and a temperature of at least about 170°F to provide a primary extract.

The Kalenian patent neither teaches nor suggests the subject matter of claim 1. Applicant respectfully notes that the claimed extraction process is conducted at pressures from about 10 to 48 psig. The Kalenian patent discloses a “pressure-treat step” having pressures from at least 50 psig to more than 1000 psig. Col 10, line 63 through Col. 11, line 4. The Kalenian process requires higher pressures than those cited in claim 1. A lower pressure process offers several advantages that include, but are not limited to, safer operating conditions. In addition, less expensive equipment is required for processes at lower pressures, thereby resulting in a more economical process.

The Technical Bulletin also does not teach or suggest the subject matter of claim 1. The Technical Bulletin discloses a process for enzyme assisted vanilla extraction which includes digesting finely chopped cured vanilla pods at a temperature of 40-60°C for 3-16 hours followed by alcohol extraction. Figure 4. The Technical Bulletin does not provide temperature or pressure parameters for the alcohol extraction process.

Because neither the Kalenian patent nor the Technical Bulletin, taken separately or combined, teaches or suggests the subject matter of claim 1, applicant respectfully requests reconsideration and allowance of claim 1 and dependent claims 3, 7-17, 21-23, and 49-51.

Claim 6 depends from allowable independent claim 1 and, therefore, is allowable. Claim 6 also recites additional patentable subject matter, namely, a pressure of about 10 to 45 psig. Accordingly, dependent claim 6 is further allowable.

Claim 52 depends from allowable independent claim 1 and, therefore, is allowable. Claim 52 also recites additional patentable subject matter, namely, a pressure of about 10 to 40 psig. Accordingly, dependent claim 52 is further allowable.

Claim 53 depends from allowable independent claim 1 and, therefore, is allowable. Claim 53 also recites additional patentable subject matter, namely, a pressure of about 10 to 35 psig. Accordingly, dependent claim 53 is further allowable.

II. Independent Claim 24 and Dependent Claims 25, 29-30, 32, 36-40 and 63-64

Amended claim 24 recites a process for producing a natural vanilla extract comprising:

(a) combining in a reactor cured vanilla beans and an aqueous alcohol solvent having a vapor pressure and comprising about 30 to about 65 vol% alcohol;

(b) sealing the reactor including the aqueous alcohol solvent and cured vanilla beans under ambient pressure; and

(c) contacting the cured vanilla beans and the aqueous alcohol solvent in the sealed reactor at a processing temperature of at least about 170°F and a pressure dictated by the vapor pressure of the aqueous alcohol solvent at the processing temperature to provide a primary extract.

The Kalenian patent neither teaches nor suggests the subject matter of claim 24. Applicant respectfully notes that the claimed extraction process operates at a pressure dictated by the vapor pressure of the aqueous alcohol solvent in the sealed reactor at the processing temperature. In contrast, the Kalenian process subjects the roasted coffee to “a novel ‘pressure-treat’ step, which facilitates thorough wetting of the coffee and the elimination of air pockets or channels, as well as penetration of the aqueous solvent into the coffee particles themselves to increase the efficiency of extraction.” Col. 10, lines 38-44. “The pressure-treat step is performed by increasing the static pressure in the vessel containing the coffee and aqueous solvent to a predetermined and controllable pressure above atmospheric pressure while

maintaining the outlet valves in a closed configuration so as to prevent any flow of extract from the vessel.” Col. 10, line 44-49. The vessel can be pressurized by addition of additional pressurized aqueous solvent, or alternatively by addition of a pressurized gas to the vessel from an external source of pressurized gas through an inlet line to the vessel.” Col. 10, lines 49-53. Therefore, Kalenian process does not teach or suggest an extraction pressure dictated by the vapor pressure of the aqueous alcohol solvent at the processing temperature to provide a primary extract. This simplifies the method of controlling the pressure and eliminates the need to fit the reaction vessel for such a purpose. In addition, this provides for a safer process.

The Technical Bulletin also does not teach or suggest the subject matter of claim 24. As discussed above, the Technical Bulletin does not provide temperature parameters for the alcohol extraction process.

Because neither the Kalenian patent nor the Technical Bulletin, taken separately or combined, teach or suggest the subject matter in claim 24, applicant respectfully requests reconsideration and allowance of claim 24 and dependent claims 25, 29-30, 32, and 36-40.

Claim 63 depends from allowable independent claim 24 and, therefore, is allowable. Claim 63 also recites additional patentable subject matter, namely, a pressure of about 10 to 48 psig. Accordingly, dependent claim 63 is further allowable.

Claim 64 depends from allowable independent claim 24 and, therefore, is allowable. Claim 64 also recites additional patentable subject matter, namely, a pressure of about 10 to 40 psig. Accordingly, dependent claim 64 is further allowable.

III. Independent Claim 42 and Dependent Claims 54-60

Amended claim 42 recites a process for producing a natural botanical extract comprising: contacting botanical material with an aqueous alcohol solvent at a pressure of at least about 10 to about 48 psig and a temperature of at least about 170°F to provide a primary extract.

The Kalenian patent neither teaches nor suggests the subject matter of claim 42. Applicant respectfully notes that the claimed extraction process is conducted at pressures from about 10 to 48 psig. The Kalenian patent discloses a “pressure-treat step” having pressures from at least 50 psig to more than 1000 psig. Col. 10, line 63 through Col. 11, line 4. The Kalenian process requires higher pressures than those cited in claim 1. A lower pressure process offers several advantages that include, but are not limited to, safer operating conditions. In addition,

less expensive equipment is required for processes at lower pressures, thereby resulting in a more economical process.

The Technical Bulletin also does not teach or suggest the subject matter of claim 42. The Technical Bulletin discloses a process for enzyme assisted vanilla extraction which includes digesting finely chopped cured vanilla pods at a temperature of 40-60°C for 3-16 hours followed by alcohol extraction. Figure 4. The Technical Bulletin does not provide temperature or pressure parameters for the alcohol extraction process.

Because neither the Kalenian patent nor the Technical Bulletin, taken separately or combined, teaches or suggests the subject matter of claim 42, applicant respectfully requests reconsideration and allowance of claim 1 and dependent claims 57-60.

Claim 54 depends from allowable independent claim 42 and, therefore, is allowable. Claim 54 also recites additional patentable subject matter, namely, a pressure of about 10 to 45 psig. Accordingly, dependent claim 54 is further allowable.

Claim 55 depends from allowable independent claim 42 and, therefore, is allowable. Claim 55 also recites additional patentable subject matter, namely, a pressure of about 10 to 40 psig. Accordingly, dependent claim 55 is further allowable.

Claim 56 depends from allowable independent claim 42 and, therefore, is allowable. Claim 56 also recites additional patentable subject matter, namely, a pressure of about 10 to 35 psig. Accordingly, dependent claim 56 is further allowable.

IV. Independent Claim 43 and Dependent Claim 48, 61-62 and 65-66

Amended claim 43 recites a process for producing a natural vanilla extract comprising:

(a) combining cured vanilla beans and an aqueous alcohol solvent comprising about 30 to 80 vol% alcohol in a reactor;

(b) sealing the reactor containing a slurry including the aqueous alcohol solvent and cured vanilla beans under ambient pressure; and

(c) agitating the slurry in the sealed reactor with at least one of a plow and chopping blade at a temperature of about 180 to 250°F to provide a primary extract.

Neither the Kalenian patent nor the Technical Bulletin teaches or suggests the subject matter of claim 43. Applicant respectfully notes that the claimed extraction process includes agitating the slurry in the sealed reactor with at least one of a plow and chopping blade at a temperature of about 180 to 250°F to provide a primary extract. Agitation “enhance[s] the

interaction and contact between the solvent and solid [] material and may aid in breaking down the particles of the solid into smaller particles.” Application, ¶ 20.

The Kalenian process preferably includes “filling the internal volume of the vessel with roasted coffee” and adding “enough aqueous solvent ... to fill the void volume of the quantity of roasted coffee in the vessel and completely cover and wet the roasted coffee.” Col. 10, lines 17-22. The roasted coffee is subjected to “a novel ‘pressure-treat’ step, which facilitates thorough wetting of the coffee and the elimination of air pockets or channels, as well as penetration of the aqueous solvent into the coffee particles themselves to increase the efficiency of extraction.” Col. 10, lines 38-44. “[T]he pressure during the pressure-treat step is preferably at least 50 psig” Col. 10, lines 66-67. “For embodiments where very coarse ground coffee or whole bean coffee is used, the pressure is preferably higher than this range, for example 150-1000 psig or more.” Col. 11, lines 1-4. “Upon completion of the static pressure-step, an outlet valve is at least partially opened to establish flow of extract from the vessel” Col. 11, lines 10-12. The Kalenian extraction process does not disclose agitating the slurry in the sealed reactor with at least one of a plow and chopping blade at a temperature of about 180 to 250°F to provide a primary extract.

In contrast to the Kalenian process, the claimed process agitates and enhances interaction between the beans and solvent within the reactor and provides for effective and efficient extraction. The fluid dynamics occurring within the reactor in the claimed process is different from that occurring in the Kalenian process. This difference is reflected in the mechanics of the reactor vessels as well as differences in process parameters. For example, the claimed process can operate at significantly lower pressures than those cited in the Kalenian patent. See, e.g., applicant’s Examples 1-3.

The Technical Bulletin discloses an extraction process in which enzymes are used to significantly improve the yield and quality of the vanilla extract. The Technical Bulletin does not teach and suggest combining cured vanilla beans and an aqueous alcohol solvent comprising about 30 to 80 vol% alcohol in a reactor, sealing the reactor containing a slurry including the aqueous alcohol solvent and cured vanilla beans under ambient pressure; and agitating the slurry in the sealed reactor with at least one of a plow and chopping blade at a temperature of about 180 to 250°F to provide a primary extract.

Since the Kalenian patent and the Technical Bulletin neither teach nor suggest the subject matter of claim 43, applicant respectfully requests reconsideration and allowance of claim 43 and dependent claims 48 and 61-62.

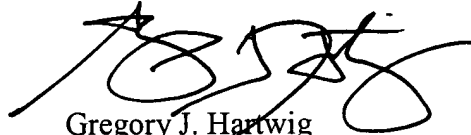
Claim 65 depends from allowable independent claim 43 and, therefore, is allowable. Claim 65 also recites additional patentable subject matter, namely, agitating the slurry at a pressure of about 10 to 48 psig. Accordingly, dependent claim 65 is further allowable.

Claim 66 depends from allowable independent claim 43 and, therefore, is allowable. Claim 66 also recites additional patentable subject matter, namely, agitating the slurry at a pressure of about 10 to 40 psig. Accordingly, dependent claim 66 is further allowable.

CONCLUSION

In view of the foregoing, claims 1, 3, 6-17, 21-25, 29-30, 32, 36-40, 43, and 48-66 are allowable. Reconsideration and allowance of the application are respectfully requested. Should any issues remain, the Examiner is encouraged to contact the undersigned at the telephone number listed below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Gregory J. Hartwig', with a stylized, cursive flourish extending from the end.

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